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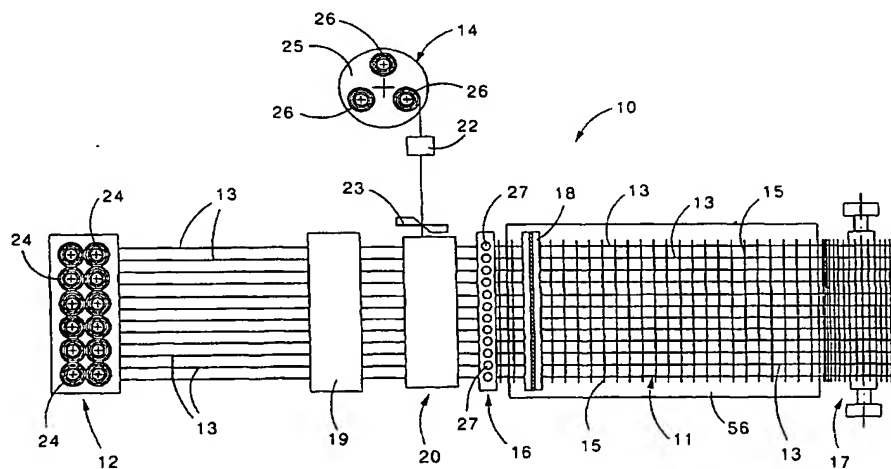
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(54) Title: MACHINE FOR THE FORMATION OF METAL MESH AND RELATIVE METHOD



(57) Abstract: Machine (10) for the formation of a metal mesh (11) obtained by attaching together a plurality of longitudinal metal wires (13) to a plurality of transverse metal wires (15). The machine (10) comprises a first feed assembly (12) to make the longitudinal wires (13) advance step-wise, a second feed assembly (14) to arrange one transverse wire (15) at a time in a first preparation position, a positioning apparatus to arrange the transverse wire (15) in a second attachment position, and a welding assembly (16) to attach the transverse wires (15) to the longitudinal wires (13). The positioning apparatus comprises a loading assembly (30), provided with a gripping and transfer device (31), in order to locate the transverse wire (15) in the second attachment position. The machine (10) also comprises thrust means (33) to take the transverse wire (15) from the first preparation position to a third intermediate pick-up position, near the second attachment position, wherein the transverse wire (15) is picked up by the gripping and transfer device (31). The thrust means (33) comprises a rotary element (52) provided with blade means (54) able to thrust the transverse wire (15) from the first preparation position to the third intermediate pick-up position.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B21F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 539 457 A (PINGER EGON ET AL) 3 September 1985 (1985-09-03) cited in the application column 5, line 51 - column 7, line 3; figures	1,2,14, 17,20
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 01, 31 January 1997 (1997-01-31) -& JP 08 243763 A (SANYO DENKI KK), 24 September 1996 (1996-09-24) abstract	1-3
A	WO 95 06532 A (BERNARDINIS CLAUDIO ;ZEBELLONI CARINO (IT)) 9 March 1995 (1995-03-09) page 5, line 15 - page 6, line 7; claim 1; figure 2	1,4
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 177 851 A (IMPIANTI INDUSTRIALI SPA) 6 February 2002 (2002-02-06) column 3, line 53 - column 4, line 5 column 5, line 35 - column 6, line 32; figures -----	1,5
A	US 5 013 879 A (LIND TORVALD) 7 May 1991 (1991-05-07) column 3, line 11 - column 4, line 19; figures -----	1,3

INTERNATIONAL SEARCH REPORT

International App. No.
PCT/IB 03/02331

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4539457	A	03-09-1985	DE 3245179 A1	07-06-1984
			AT 383971 B	10-09-1987
			AT 420283 A	15-02-1987
			BE 898387 A1	30-03-1984
			DE 3249620 A1	06-12-1984
			DE 3325932 A1	07-02-1985
			ES 8501659 A1	01-03-1985
			FR 2553692 A1	26-04-1985
			GB 2132541 A ,B	11-07-1984
			IT 1169359 B	27-05-1987
			NL 8304171 A	02-07-1984
			SE 8306732 A	08-06-1984
JP 08243763	A	24-09-1996	NONE	
WO 9506532	A	09-03-1995	IT 1262186 B	19-06-1996
			AU 7611594 A	22-03-1995
			WO 9506532 A1	09-03-1995
			EP 0674553 A1	04-10-1995
			ZA 9405988 A	17-07-1995
EP 1177851	A	06-02-2002	IT UD20000095 A1	12-11-2001
			EP 1177851 A2	06-02-2002
US 5013879	A	07-05-1991	SE 452716 B	14-12-1987
			AU 601265 B2	06-09-1990
			AU 1228088 A	15-07-1988
			WO 8804590 A2	30-06-1988
			HU 57093 A2	28-11-1991
			JP 63309381 A	16-12-1988